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EXAMINER

SMITH, TYRONE W

ART UNIT PAPER NUMBER

2837

DATE MAILED: 09/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,791

Applicant(s)

FULTON ET AL.

Examiner

Tyrone W Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

1. Examiner requests that the Applicant look through claims 32-42, claim 34 seems to be omitted from the Applicant or misnumbered. Appropriate correction is requested.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-9 and 11-25, 30-33, 36 and 41-42 rejected under 35 U.S.C. 103(a) as being unpatentable over Kono (5160875) in view of Griffith et al (4415812).

Regarding Claims 1, 2 and 6. Kono discloses DC motor controller, which includes a power source (Figure 2 # 22) for providing a original/first voltage, a DC motor/device (Figure 2 # 33) that operates at a second voltage lower than the original/first voltage; control circuit, which includes the transformer/DC chopper (Figure 2 # 21), rectifier (Figure 2 # 23) and relays (Figure 2 # 27, 31 and 41), is connected to the power source and the DC motor and produces a second voltage lower than the first voltage to the DC motor. However, Kono does not disclose an actuator for actuating the device, the actuator receiving a first signal or voltage, provide a signal or voltage to the device in response to the operation of the actuator.

Griffith discloses an electric starting system with a starter (Figure 1 # 10), which includes a control means (column 5 lines 57-68), a solenoid/actuator (Figure 1 # 20) and a DC motor (Figure 1 # 13). The actuator receiving a first signal/command or voltage for actuating the device (Figure 1; column 1 lines 51-68, column 2 lines 1-10, column 5 lines 57-68 and column 6

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lines 1-36) and provides a signal or voltage to the motor/device in response to the operation of the actuator (column 5 lines 57-68 and column 6 lines 1-36).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 3 and 5. Kono discloses a power source (Figure 2 # 22). Kono's power source can be modified to meet any requirement meant by the invention; change in size (power source voltage) is generally recognized as being within the level of ordinary skill and within the motor control arts.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 7, 30 and 41. Both Kono (Figure 2 # 27, 31 and 41) and Griffith (Figure 1 # 43, 68A, 72B and 72A) show the actuator or device controlled by relays and can be modified to solid-state relays.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC

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motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 8, 9, 11, 14, 15 and 17. Kono discloses DC motor controller, which includes a power source (Figure 2 # 22) for providing a original/second voltage, a DC motor/device (Figure 2 # 33) that operates at a second voltage lower than the original/first voltage; control circuit, which includes the transformer (Figure 2 # 21), rectifier (Figure 2 # 23) and relays (Figure 2 # 27, 31 and 41), is connected to the power source and the DC motor and produces a first voltage lower than the second voltage to the DC motor. It has been held that a mere reversal of essential working function, in this case first and second voltage, of the apparatus/method involves only routine skill in the art. However, Kono does not disclose the actuator to actuate the device using the second voltage or signal in response to the switch closing, provides a first voltage to the device at or after the actuation of the device and inhibits the first voltage from being provided in response to the switch opening.

Griffith discloses an electric starting system with a starter (Figure 1 # 10), which includes a control means (column 5 lines 57-68), a solenoid/actuator (Figure 1 # 20) and a DC motor (Figure 1 # 13). Griffith's invention teaches the actuator to actuate the device using the second voltage or signal in response to the switch closing (column 5 lines 57-68 and column 6 lines 1-15), provides a first voltage to the device at or after the actuation of the device (column 1 lines 19-45) and inhibits the first voltage from being provided in response to the switch opening (column 5 lines 57-68 and column 6 lines 1-15).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC

motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 12, 13, 18 and 19. Kono discloses a power source (Figure 2 # 22). Kono's power source can be modified to meet any requirement meant by the invention; change in size (power source voltage) is generally recognized as being within the level of ordinary skill and within the motor control arts.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 20, 21 and 32. Kono discloses DC motor controller, which includes a power source (Figure 2 # 22) for providing a original/first voltage, a DC motor/device (Figure 2 # 33) that operates at a second voltage lower than the original/first voltage; control circuit, which includes the transformer, which can performs as the DC chopper, (Figure 2 # 21), rectifier (Figure 2 # 23) and relays (Figure 2 # 27, 31 and 41), is connected to the power source and the DC motor and produces a second voltage lower than the first voltage to the DC motor. Further, Kono teaches three relays (open/close switches) (Figure 1 # 25, 29 and 42) where the activation of the third relay deactivates the first and second relay to prevent the transformer from sending a second voltage to the DC motor (see Figure 1; column 6 lines 37-50). However, Kono does not show activation of a first and second relay to cause voltage to flow through the control line and then to the actuator or motor.

Griffith discloses an electric starting system with a starter (Figure 1 # 10), which includes a control means (column 5 lines 57-68), a solenoid/actuator (Figure 1 # 20) and a DC motor (Figure 1 # 13). The actuator receiving a first signal/command or voltage for actuating the device (Figure 1; column 1 lines 51-68, column 2 lines 1-10, column 5 lines 57-68 and column 6 lines 1-36) and provides a signal or voltage to the motor/device in response to the operation of the actuator (column 5 lines 57-68 and column 6 lines 1-36). Further, Griffith discloses a first relay or switch (Figure 1 # 40) and a second relay (Figure 1 # 43) is activated through a control line (Figure 1 # 42, 47 and 86) thereby activating the battery (Figure 1 # 36) and the third relay or contact (Figure 1 # 84B) to energize the actuator/solenoid (column 3 lines 58-68 and column 4 lines 1-65).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 22, 23, 31, 33 and 42. Kono discloses a power source (Figure 2 # 22). Kono's power source can be modified to meet any requirement meant by the invention; change in size (power source voltage) is generally recognized as being within the level of ordinary skill and within the motor control arts.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the

armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

Regarding Claims 25 and 36. Refer to Figure 1 of Kono where the use of coils can be substituted for resistors.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono's DC motor controller with Griffith discloses a electric starting system. The advantage of combining the two would provide a controller for operating an actuator and DC motor in which can utilize the voltage to make it possible to detect rotational speed of the armature of the cranking motor to prevent motor energization when the cranking motor armature is rotating at a speed to cause damage to the motor.

4. Claims 4, 10, 24 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Kono (5160875) in view of Griffith et al (4415812) as applied to claims 1-3, 5-9 and 11-19 above, and further in view of King et al (5723956).

Regarding Claims 4, 10 and 35. Kono discloses DC motor controller, which includes a power source (Figure 2 # 22) for providing a original/first voltage, a DC motor/device (Figure 2 # 33) that operates at a second voltage lower than the original/first voltage; control circuit, which includes the transformer/DC chopper (Figure 2 # 21), rectifier (Figure 2 # 23) and relays (Figure 2 # 27, 31 and 41), is connected to the power source and the DC motor and produces a second voltage lower than the first voltage to the DC motor. Griffith discloses an electric starting system with a starter (Figure 1 # 10), which includes a control means (column 5 lines 57-68), a solenoid/actuator (Figure 1 # 20) and a DC motor (Figure 1 # 13). The actuator receiving a first signal/command or voltage for actuating the device (Figure 1; column 1 lines 51-68, column 2 lines 1-10, column 5 lines 57-68 and column 6 lines 1-36) and provides a signal or voltage to the

motor/device in response to the operation of the actuator (column 5 lines 57-68 and column 6 lines 1-36). Griffith's invention teaches the actuator to actuate the device using the second voltage or signal in response to the switch closing (column 5 lines 57-68 and column 6 lines 1-15), provides a first voltage to the device at or after the actuation of the device (column 1 lines 19-45) and inhibits the first voltage from being provided in response to the switch opening (column 5 lines 57-68 and column 6 lines 1-15). However, neither Kono nor Griffith discloses a control with a dc chopper producing a PWM voltage or signal.

King discloses a DC chopper for providing PWM signal or second voltage to the DC motor (column 2 lines 50-67).

It would have been obvious to one of ordinary skill in the art at the time of invention to use King's teachings with Kono's DC motor controller and Griffith's an electric starting system. The combination of the two would provide an interface for a passive auxiliary energy storage device that does not require the use of a converter and associated controls.

5. Claims 26-29 and 37-40 rejected under 35 U.S.C. 103(a) as being unpatentable over Kono (5160875) in view of Griffith et al (4415812) as applied to claims 1-3, 5-9 and 11-25, 30-33, 36 and 41-42 above, and further in view of Waterhouse (4188931).

Regarding Claims 26-29 and 37-40. Kono discloses DC motor controller, which includes a power source (Figure 2 # 22) for providing a original/first voltage, a DC motor/device (Figure 2 # 33) that operates at a second voltage lower than the original/first voltage; control circuit, which includes the transformer/DC chopper (Figure 2 # 21), rectifier (Figure 2 # 23) and relays (Figure 2 # 27, 31 and 41), is connected to the power source and the DC motor and produces a second voltage lower than the first voltage to the DC motor. Griffith discloses an electric starting system with a starter (Figure 1 # 10), which includes a control means (column 5 lines 57-68), a

solenoid/actuator (Figure 1 # 20) and a DC motor (Figure 1 # 13). The actuator receiving a first signal/command or voltage for actuating the device (Figure 1; column 1 lines 51-68, column 2 lines 1-10, column 5 lines 57-68 and column 6 lines 1-36) and provides a signal or voltage to the motor/device in response to the operation of the actuator (column 5 lines 57-68 and column 6 lines 1-36). Griffith's invention teaches the actuator to actuate the device using the second voltage or signal in response to the switch closing (column 5 lines 57-68 and column 6 lines 1-15), provides a first voltage to the device at or after the actuation of the device (column 1 lines 19-45) and inhibits the first voltage from being provided in response to the switch opening (column 5 lines 57-68 and column 6 lines 1-15). However, neither Kono nor Griffith discloses a slow blow fuse coupled between a relay and a ground.

Waterhouse discloses a automotive self-starting device which includes a battery (Figure 1 # 10), a slow blow fuse (Figure 1 # 12) which is coupled between a relay or contact (Figure 1 # 16) and a ground. The slow blow fuse can be connected to any number of relays. Refer to column 3 lines 39-68 and column 4 lines 1-44.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Waterhouse's invention with Kono's DC motor controller and Griffith's an electric starting system. The advantage would prevent unauthorized use of the vehicle by an individual attempting to drive it away from its location once it has automatically started without the owner therein.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W Smith whose telephone number is 703-306-5987. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi, can be reached on (703) 308-3370. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

Tyrone Smith
Patent Examiner

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ROBERT NAPPI
SUPERVISORY PATENT EXAMINER